RECLAMATION PLAN FOR

RMC PACIFIC MATERIALS, INC.
ALCATRAZ / SLC Lease No. 5871.1

MARINE SAND MINING OPERATION

CALIFORNIA MINE ID#: _____

Mine Name: RMC Alcatraz Sand Shoal (State Lands Commission Lease No. 5871.1)[1]

In this Reclamation Plan:

Section I. Statutory Reclamation Plan Requirements
Section II. Regulatory Reclamation Plan Requirements
Section III. Performance Standards for Reclamation Activities
Section IV. Financial Assurances
Section V. California Environmental Quality Act Compliance

I. Statutory Reclamation Plan Requirements: General Ownership/Operation Information[2]

1. *The name and address of the surface mining operator and the names and addresses of any persons designated by the operator as an agent for the service of process.*

Surface Mining Operator and Address:
RMC Pacific Materials, Inc.
% Dennis Tsuchida
6601 Koll Center Parkway, P.O. Box 5252
Pleasanton, CA 94566
Telephone: (925) 426-8787

Surface Mining Operator's Designated Agent and Designated Agent's Address:
Not Applicable.

2. *The anticipated quantity and type of minerals for which the surface mining operation is to be conducted.*

Type of Material: Sand

Anticipated Quantity: Maximum annual volumes are established in the State Lands Commission (SLC) lease and permits of the Army Corps of Engineers (COE) and the San Francisco Bay Conservation and Development Commission (BCDC). RMC anticipates mining a maximum of 50,000 cubic yards of marine sand per year from this site, in accordance with the production limit contained in US Army Corps of Engineers Permit No. 25669S. State Lands Commission Lease No. 5871.1 and Bay Conservation and Development Commission Permit No. 95-13 would allow greater annual production: 100,000 cubic yards/year.

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[1] This operation also is subject to Army Corps of Engineers Permit No. 25669S, San Francisco Bay Conservation and Development Permit No. 95-13 and Regional Water Quality Control Board General Waste Discharge Requirements (Order No. 95-177, as amended by Order No. 00-048). The applicable lease and permits were submitted to the State Mining and Geology Board in October 2004.

[2] Pub. Res. Code § 2772(c).

3. The proposed dates for the initiation and termination of surface mining operation.

Initiation Date: Sand mining at this location has been carried out for many years pursuant to various leases issued by the State Lands Commission and subject to permits and approvals of the U.S. Army Corps of Engineers, the San Francisco Bay Conservation and Development Commission, and the California Regional Water Quality Control Board, as applicable. See **Attachment A:** ***Assessment & Evaluation of the Effects of Sand Mining on Aquatic Habitat and Fishery Populations of Central San Francisco Bay and the Sacramento-San Joaquin Estuary (AHFP Study)***. The current lease was renewed to be effective July 1, 1998.

Termination Date: The State Lands Commission lease and agency permits governing mining at this location are subject to extension by the respective agencies. The leases and permits were submitted separately and they contain the individual expiration dates. As the lease and permits expire, they are renewed on an ongoing basis. The State Lands leases are currently set to expire, and they will be considered for extension in June 2008. Mining at this location is expected to extend beyond the term of the current lease and permits.

4. The maximum anticipated depth of the surface mining operation.

This is an underwater mining operation. The anticipated depth of the subsurface mining operation ranges from 30 feet mean lower low water (MLLW) to 90 feet MLLW.

5. The size and legal description of the lands that will be affected by the surface mining operation, a map that includes the boundaries and topographic details of the lands, a description of the general geology of the area, a detailed description of the geology of the area in which surface mining is to be conducted, the location of all streams, roads, railroads, and utility facilities within, or adjacent to, the lands, the location of all proposed access roads to be constructed in conducting the surface mining operation, and the names and addresses of the owners of all surface interests and mineral interests in the lands.

Size, Legal Description and Map: The subsurface area of the lands that will be affected by mining operations is approximately 263.5 acres and is shown on Figure 3 on page number eleven. Figure 3 includes the topography of the mining site with State Lands Commission Lease No. 5871.1 outlined. The high velocity / high sediment transport areas are also generally indicated on Figure 1 with the sand shoaling in the background. Figure 2 on page ten provides more information about the high velocity / high transport areas with arrows showing the flood tide currents. The size of the arrows indicates the comparative tide current velocities with the larger arrows representing the higher velocities.

General and Detailed Descriptions of the Geology: The known unique geological and physical features at the mining site are shown on Figure 3 on page eleven. The submerged lands are located at depths of 30 to more than 100 feet. The sand shoals shown in Figure 1 are in constant motion and are subject to continual processes of erosion and deposition caused by natural flows and currents.

The Bay-Delta estuary occupies a series of connected geologic structural depressions in the California Coast Ranges and western Central Valley, between the delta of the Sacramento and San Joaquin rivers and the Pacific Ocean at the Golden Gate. In the present geologic configuration, the system forms the mouth of this combined river system that drains much of

the interior of California. The shapes of the depressions appear to have been formed primarily by tectonic motions, with some modification by river erosion.[3]

One of the important geologic features of the San Francisco Bay and Delta Estuary is the presence of a number of faults, most of which have north-northwest trends. The faults are important to the sand mining resources for a number of reasons, which include: separation of geologic structural basins of varying dimensions and age; separations of source areas of various types of minerals that are found in the sand; direct impacts of fault zone deformation on the configuration of the floor of the bay and ocean; and the possibility that earthquakes may affect sediment distribution, either by changing the shape of the Bay and ocean floor or by generation of tsunamis which could transport sediment.[4]

Patterns of sediment transport and areas of accretions and depletions within Central Bay are complex due to the strong influence of tidal current velocities, tidal sediment exchange through the Golden Gate, and the effects of various structures and topography within Central Bay on the distribution and magnitude of tidal current velocities on both ebb and flood tide conditions. The source of sand and other sediments within Central Bay is thought to originate from both river transport from Suisun Bay and San Pablo Bay, from nearshore coastal areas associated with the San Francisco Bay Bar, and to a smaller extent from local erosion and tributary inflow. Characteristics of sand particles and patterns of accretions and depletions vary among different regions of the estuary and appear to be generally consistent with variations in the source of material and hydraulic transport mechanisms associated with both river flow and tidal exchange.[5]

Areas of deposition within Central Bay correspond with tidal velocity predictions which are consistent with dynamic bedload movement (e.g., sand waves) within areas where sand is deposited. These dynamic bed forms within Central Bay are characterized by both the occurrence of sand waves and are consistent with observations of low percentage of fine material within the sand deposits, resulting from erosion and scour of fine sediments associated with higher velocity areas. [6]

Location of Listed Structures: Due to the mining site's underwater location, there are no streams, roads, railroads, or utility facilities within, or adjacent to, the mining site, nor are there proposed access roads to be constructed in conducting the subsurface mining operation. No bridge foundations or docks are located in the lease area. Underwater pipes and other structures within the lease area are shown in Figure 3 on page eleven. No mining occurs in these areas; therefore, the mining activities would have no effect on these areas.

[3] ***Assessment and Evaluation of the Effects of Sand Mining on Aquatic Habitat and Fishery Populations of Central San Francisco Bay and the Sacramento – San Joaquin Estuary*** by Hanson Environmental, Inc. published in October 2004. Hanson Environmental is wholly owned by Dr. Charles H. Hanson who resides in Walnut Creek, California.

[4] Hanson Environmental, Inc. Final Study published October 2004.
[5] Hanson Environmental, Inc. Final Study published October 2004.
[6] Hanson Environmental, Inc. Final Study published October 2004.

Names and Addresses of Owners with Surface and Mineral Interests:
The State Lands Commission
(Lease No. 5871.1)
100 Howe Avenue, Suite 100 South
Sacramento, CA 95825
Telephone: (916) 574-1900 Facsimile: (916) 574-1835

6. *A description of, and a plan for, the type of surface mining to be employed, and a time schedule that will provide for the completion of surface mining on each segment of the mined lands so that reclamation can be initiated at the earliest possible time on those portions of the mined lands that will not be subject to further disturbance by the surface mining operations.*

Description of and Plan for Surface Mining Type: Sand is mined from the San Francisco Bay floor using a trailing arm hydraulic suction dredge which loads mined sand into a hopper barge. Production limits as well as requirements relating to sand mining are imposed in the State Lands Commission lease and permits of the Army Corps of Engineers, BCDC and the Regional Water Quality Control Board. These limits and requirements are shown in the permits and lease which were submitted in October 2004 to the State Mining and Geology Board.

For more detail, see **Attachment A:** ***Assessment & Evaluation of the Effects of Sand Mining on Aquatic Habitat and Fishery Populations of Central San Francisco Bay and the Sacramento-San Joaquin Estuary (AHFP Study)***, Section 2.0, Sand Mining Activity and Section 3.0, Projected Future Sand Mining Activity.

Time Schedule: No termination date for mining has been established because the lease and approvals that authorize mining at this site are subject to renewal. See footnote 1. In addition, a time schedule for phased reclamation is not established here because reclamation, or replenishment of the bed materials, occurs naturally and continually as an ongoing process. It starts after each mining event and will continue after all mining activities in the lease / permit area cease. Monitoring is required by the regulatory agencies, and it is conducted on a routine basis to measure and to evaluate overall depletions and accretions within the lease boundaries. Under these circumstances, a phased reclamation schedule is not appropriate and, therefore, is not established for this lease/permit area.

7. *A description of the proposed use or potential uses of the mined lands after reclamation and evidence that all owners of a possessory interest in the land have been notified of the proposed use or potential uses.*

Proposed Use of the Mined Lands After Reclamation: The mined lands natural function and proposed end use as the San Francisco Bay bottom for habitat and commerce is not and will not be impacted by the mining activities and that function will not change after cessation of mining activities.

Notification of Owners of a Possessory Interest: The State Lands Commission has granted Lease No. 5871.1 for mining purposes, and the State Lands Commission is aware that the mined lands will return to their natural condition as San Francisco Bay bottom after cessation of mining activities.

8. *A description of the manner in which reclamation, adequate for the proposed use or potential uses will be accomplished, including both of the following:*
   a. *A description of the manner in which contaminants will be controlled, and mining waste will be disposed.*
   b. *A description of the manner in which affected streambed channels and streambanks will be rehabilitated to a condition minimizing erosion and sedimentation will occur.*

   Because the proposed end use is as San Francisco Bay bottom, the objectives of SMARA will be achieved through compliance with the conditions imposed on mining in the lease and other authorizations issued to the operator and regarding reclamation, with the cessation of mining activities. The Bay Floor itself is dynamic: natural elevations constantly fluctuate and sand shoals are self-replenishing. Therefore, cessation of mining operations followed by natural replenishment is the most logical plan for reclamation. See **Attachment A: *Assessment & Evaluation of the Effects of Sand Mining on Aquatic Habitat and Fishery Populations of Central San Francisco Bay and the Sacramento-San Joaquin Estuary (AHFP Study)*.**

   a. Mining activities do not generate contaminants or mining waste at the mining site.

   b. Because of the underwater nature of the subsurface mining site and its location in San Francisco Bay, no streambed channels or streambanks are being or will be affected. Therefore, no rehabilitation is necessary.

9. *An assessment of the effect of implementation of the reclamation plan on future mining in the area.*

   Neither the mining itself nor the method of reclamation will preclude future mining activities in this area because the area's end use is as the San Francisco Bay floor. Natural replenishment of sand sources occurs following mining events. Hence, mining could be continued or reinstituted here following any cessation of mining, provided it is carried out with appropriate agency approvals and monitoring data (See **Attachment A: *Assessment & Evaluation of the Effects of Sand Mining on Aquatic Habitat and Fishery Populations of Central San Francisco Bay and the Sacramento-San Joaquin Estuary (AHFP Study),*** Section 6.0, which demonstrates that adequate supplies of sand are available.

10. *A statement that the person submitting the reclamation plan accepts responsibility for reclaiming the mined lands in accordance with the reclamation plan.*

    Please see the Certification page at the end of this Reclamation Plan.

11. *Any other information which the lead agency may require by ordinance.*

    Please see the information provided below.

II. Applicable Requirements of State Mining and Geology Board Regulations[7]

1. *The environmental setting of the site of operation and the effect that possible alternate reclaimed site conditions may have upon the existing and future uses of surrounding lands.*

   See Attachment A: ***Assessment & Evaluation of the Effects of Sand Mining on Aquatic Habitat and Fishery Populations of Central San Francisco Bay and the Sacramento-San Joaquin Estuary (AHFP Study),*** Section 4.0, Physical and Water Quality Characteristics of the Bay-Delta Estuary, Section 5.0, Aquatic Habitats and Fish Community and Section 7.0, Assessment of Potential Direct and Indirect Impacts of San mining on Aquatic Species and Their Habitat.

2. *The public health and safety, giving consideration to the degree and type of present and probable future exposure of the public to the site.*

   Reclamation will not impact public health and safety because public access and exposure to the site is limited or altogether precluded by the underwater location of the shoal. In any case, neither the mining nor the natural reclamation planned for this location will have an adverse effect on public health and safety.

3. *The designed steepness and proposed treatment of the mined lands' final slopes shall take into consideration the physical properties of the slope material, its probable maximum water content, landscaping requirements, and other factors. In all cases, reclamation plans shall specify slope angles flatter than the critical gradient for the type of material involved. Whenever final slopes approach the critical gradient for the type of material involved, regulatory agencies shall require an engineering analysis of the slope stability. Special emphasis on slope stability and design shall be necessary when public safety or adjacent property may be affected.*

   Final slopes are not established because the mining is carried out underwater, the areas mined are dynamic and constantly fluctuating with underwater currents and are naturally replenished. In addition, public safety will not be an issue due to the site's inaccessibility.

4. *Area mined to produce additional materials for backfilling and grading, as well as settlement of the filled area, shall be considered in the reclamation plan. Where ultimate site uses include roads, building sites, or other improvements sensitive to settlement, the reclamation plans shall include compaction of the fill materials in conformance with good engineering practice.*

   No backfilling, grading, or settlement of the filled area is planned for the underwater mining site. Ultimate uses will not include roads, building sites, or other improvements sensitive to settlement.

5. *Disposition of old equipment.*

   No old equipment is stored or left at the underwater mining site that currently requires or will require disposal. All mining equipment is stored at a dock location when not in use and,

[7] 14 Cal. Code Regs. § 3502.

when no longer useful, will be disposed of properly. In the unlikely event that a dredge were to sink, the sand mining operator would be responsible to recover the vessel in accordance with applicable legal requirements; such requirements are covered under the sand mining companies' liability insurance policies. This insurance covers the cost or expenses of, or incidental to, the removal of a wrecked vessel named in the policy whenever removal is required by state or federal law.

6. Temporary stream or watershed diversions.

Because of the underwater nature of the mining site and its location in San Francisco Bay, there are no present or future temporary stream or watershed diversions.

III. Minimum practices to be followed in surface mining operations.[8]

(a) Soil Erosion Control.

(1) The removal of vegetation and overburden, if any, in advance of surface mining shall be kept to the minimum.

Due to the nature of the mining activity beneath the floor of the San Francisco Bay, as described in **Attachment A:** ***Assessment & Evaluation of the Effects of Sand Mining on Aquatic Habitat and Fishery Populations of Central San Francisco Bay and the Sacramento-San Joaquin Estuary (AHFP Study)***, no removal of vegetation or overburden in advance of such activity is required.

(2) Stockpiles of overburden and minerals shall be managed to minimize water and wind erosion.

Due to the nature of the mining activity beneath the floor of the San Francisco Bay, as described in ***Attachment A: Assessment & Evaluation of the Effects of Sand Mining on Aquatic Habitat and Fishery Populations of Central San Francisco Bay and the Sacramento-San Joaquin Estuary (AHFP Study)***, no stockpiles of overburden or minerals will be created. Therefore, no erosion management of stockpiles at the mining site is required.

(3) Erosion control facilities such as retarding basins, ditches, streambank stabilization, and diking shall be constructed and maintained where necessary to control erosion.

The sand shoals in the area mined are in constant motion and are subject to continual processes of erosion and deposition caused by natural flows and currents (see **Attachment A:** ***Assessment & Evaluation of the Effects of Sand Mining on Aquatic Habitat and Fishery Populations of Central San Francisco Bay and the Sacramento-San Joaquin Estuary (AHFP Study)***). Since the erosion action is a natural process and reclaims the mined area, no erosion control facilities are required at the site of sand mining.

(b) Water Quality and Watershed Control.

(1) Settling ponds or basins shall be constructed to prevent potential sedimentation of streams at operations where they will provide a significant benefit to water quality.

[8] Pub. Res. Code § 2756; 14 Cal. Code Regs. §§ 3503, 3700-3713.

(2) Operations shall be conducted to substantially prevent siltation of ground-water recharge areas.

Ground-water recharge is not an issue for the mining sites, and siltation does not occur during marine sand mining activities. However, existing lease and permit conditions protect water quality and prevent sedimentation impacts in accordance with the performance standards for stream protection, including surface and groundwater (14 Cal. Code Regs. § 3710(a)). For example, potential water quality impacts associated with mining operations are regulated by the San Francisco Bay Regional Water Quality Control Board, pursuant to General Waste Discharge Requirements for Sand Mining, Order No. 95-177, as amended by Order No. 00-048. This permit, with its attendant requirement, was submitted to the State Mining & Geology Board in October 2004.

See also **Attachment A**: ***Assessment & Evaluation of the Effects of Sand Mining on Aquatic Habitat and Fishery Populations of Central San Francisco Bay and the Sacramento-San Joaquin Estuary (AHFP Study)***, Section 2.3.6, Characteristics of the Overflow Plume, Section 4.4, Hydrodynamics, Section 4.5 Water and Sediment Quality Characteristics,4.6, Turbidity and Suspended Sediments.

(c) Protection of Fish and Wildlife Habitat. All reasonable measures shall be taken to protect the fish and wildlife.

Potential impacts to fish and wildlife and their habitat from sand mining, as regulated pursuant to the applicable lease and permits, have been evaluated and no significant impacts have been identified. The existing limitations and guidance set forth in the RWQCB, ACOE and BCDC permits adequately address these issues and constitute "all reasonable measures" to protect the habitat of fish and wildlife in accordance with 14 Cal. Code Regs. Section 3503(c). See footnote 1 and **Attachment A**: ***Assessment & Evaluation of the Effects of Sand Mining on Aquatic Habitat and Fishery Populations of Central San Francisco Bay and the Sacramento-San Joaquin Estuary (AHFP Study)***, Section 7.0, Assessment of Potential Direct and Indirect Impacts of Sand Mining on Aquatic Species and Their Habitat.

(d) Disposal of Mine Waste Rock and Overburden. Permanent piles or dumps of mine waste rock and overburden shall be stable and shall not restrict the natural drainage without suitable provisions for diversion.

Potential impacts to fish and wildlife and their habitat from sand mining, as regulated pursuant to the applicable lease and permits have been evaluated and no significant impacts have been identified. See **Attachment A**: ***Assessment & Evaluation of the Effects of Sand Mining on Aquatic Habitat and Fishery Populations of Central San Francisco Bay and the Sacramento-San Joaquin Estuary (AHFP Study)***, Section 7.0, Assessment of Potential Direct and Indirect Impacts of Sand Mining on Aquatic Species and Their Habitat.

(e) Erosion and Drainage. Grading and re-vegetation shall be designed to minimize erosion and to convey surface runoff to natural drainage courses or interior basins designed for water storage. Basins that will store water during periods of surface runoff shall be designed to prevent erosion of spillways when these basins have outlet to lower ground.

Surface runoff is inapplicable to marine sand mining activities.

(f) Resoiling. When the reclamation plan calls for resoiling, coarse hard mine waste shall be leveled and covered with a layer of finer material or weathered waste. A soil layer shall then be placed on these prepared surface. Surface mines that did not salvage soil during their initial operations shall attempt, where feasible, to upgrade remaining materials. The use of soil conditioners, mulches, or imported topsoil shall be considered where revegetation is part of the reclamation plan and where such measures appear necessary. It is not justified, however, to denude adjacent areas of their soil, for any such denuded areas must in turn be reclaimed.

No active resoiling is needed since the substrate in areas following marine sand mining activities does not vary from unmined areas.

(g) Revegetation. When the reclamation plan calls for revegetation the available research addressing revegetation methods and the selection of species having good survival characteristics, for the topography, resoiling characteristics, and climate of the mined areas shall be used.

No active revegetation is needed. Vegetation in areas suitable for marine sand mining is naturally limited prior to mining activities. In addition, the sand on the floor of San Francisco Bay is in constant motion and is subject to continual processes of erosion and deposition caused by natural flows and currents. Where there is vegetation in mined areas, revegetation will occur naturally following such activities upon the cessation of mining.

IV. Financial Assurances

The regulation of the mining activities pursuant to applicable leases and permits, the requirements of which are incorporated by reference in this reclamation plan, provides the principal means of satisfying SMARA's objectives of preventing or minimizing adverse environmental effects of mining and ensuring the protection and subsequent beneficial use of mined land. Beyond those requirements, the cessation of marine sand mining operations followed by natural replenishment is the actual reclamation strategy. No additional costs are associated with natural replenishment and insurance covers other liabilities associated with mining activities. Therefore, no additional financial assurances are required for reclamation of the sand mining site.

V. California Environmental Quality Act Compliance

See **Attachment A***: **Assessment & Evaluation of the Effects of Sand Mining on Aquatic Habitat and Fishery Populations of Central San Francisco Bay and the Sacramento-San Joaquin Estuary (AHFP Study).***

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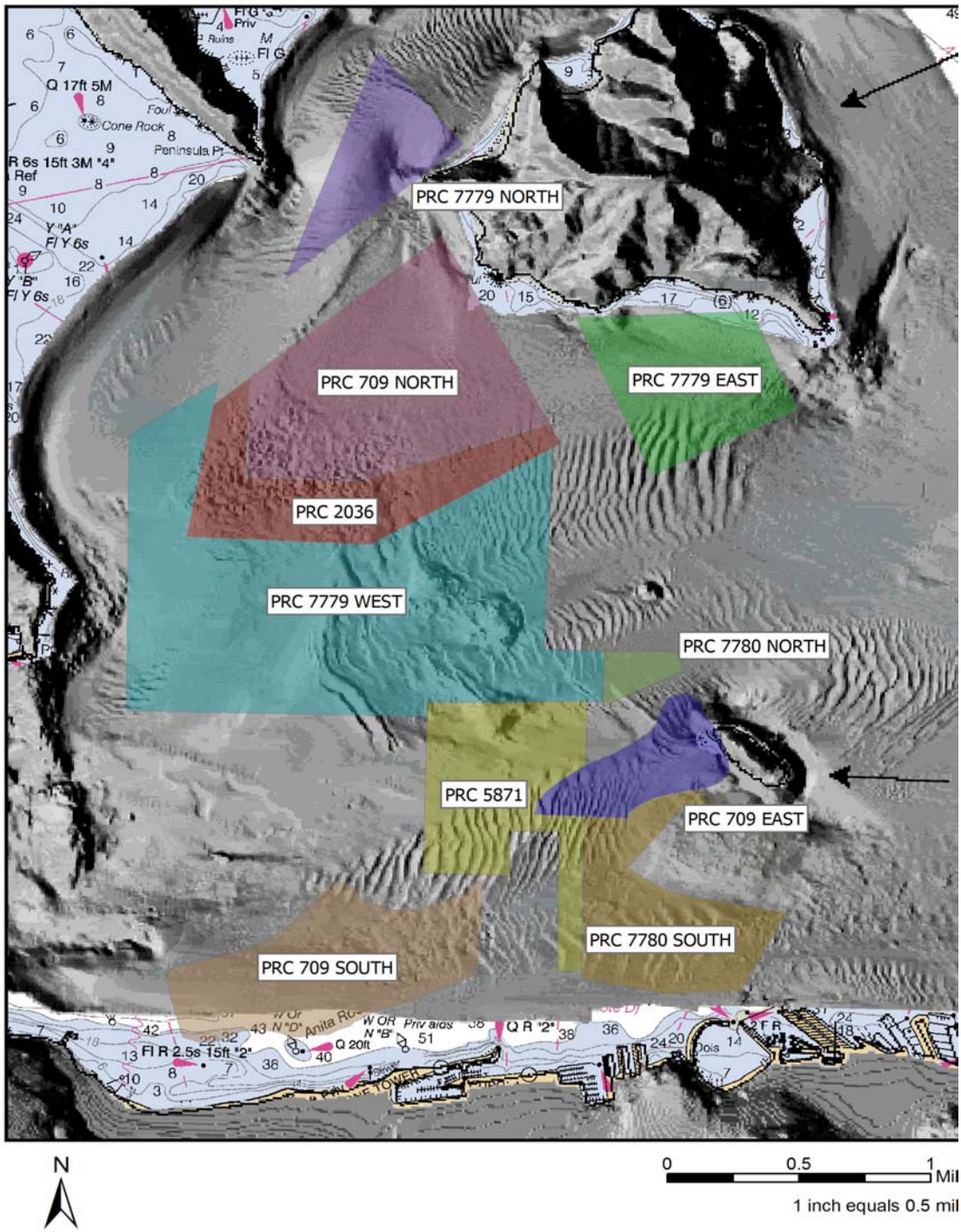
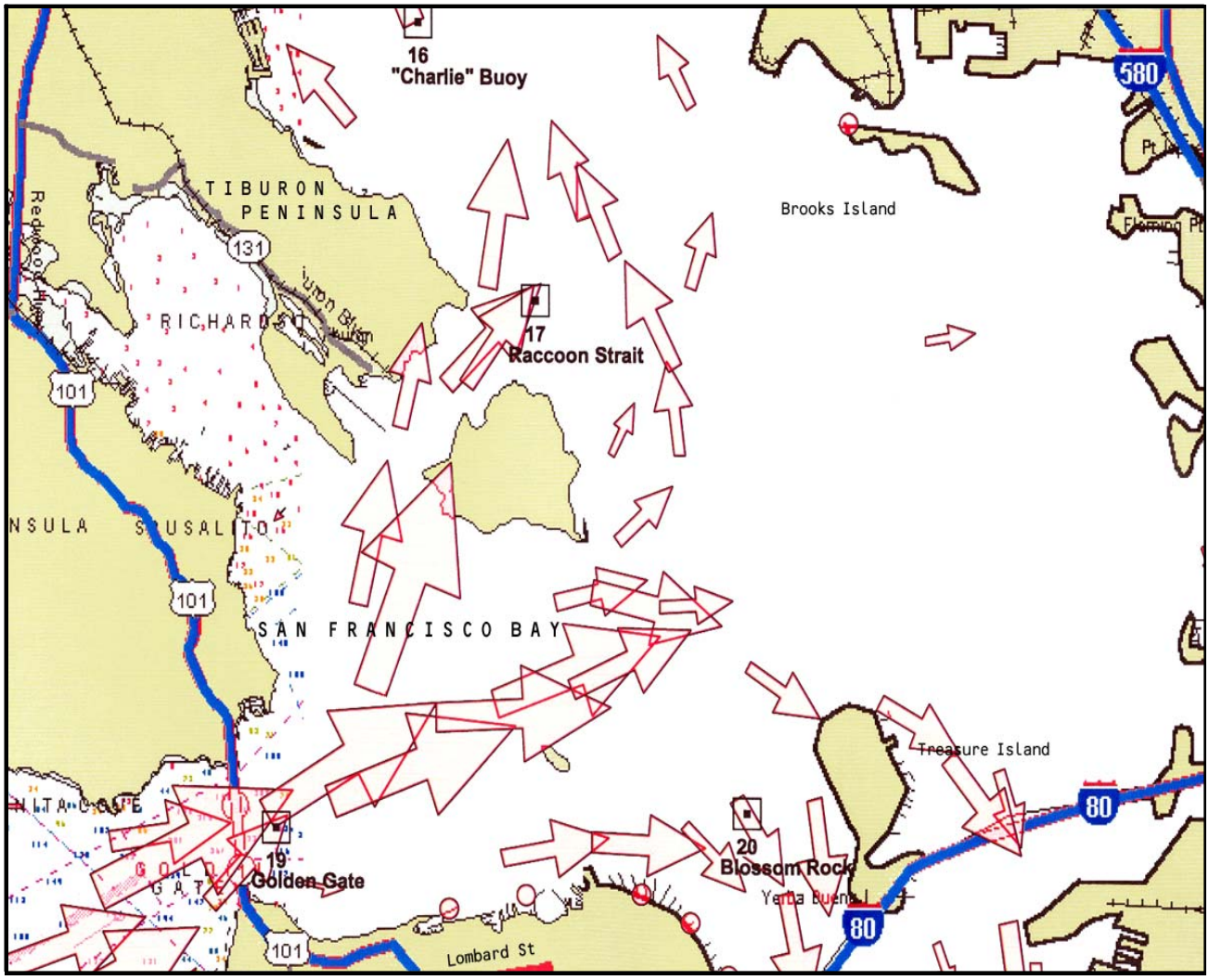


Figure 1 – Central San Francisco Bay Lease Locations: RMC's Alcatraz Sand Shoal SLC 5871.1 Included.



Flood tide current: San Francisco Central Bay

Figure 2 – Approximate Locations of High Velocity Currents in Central San Francisco Bay

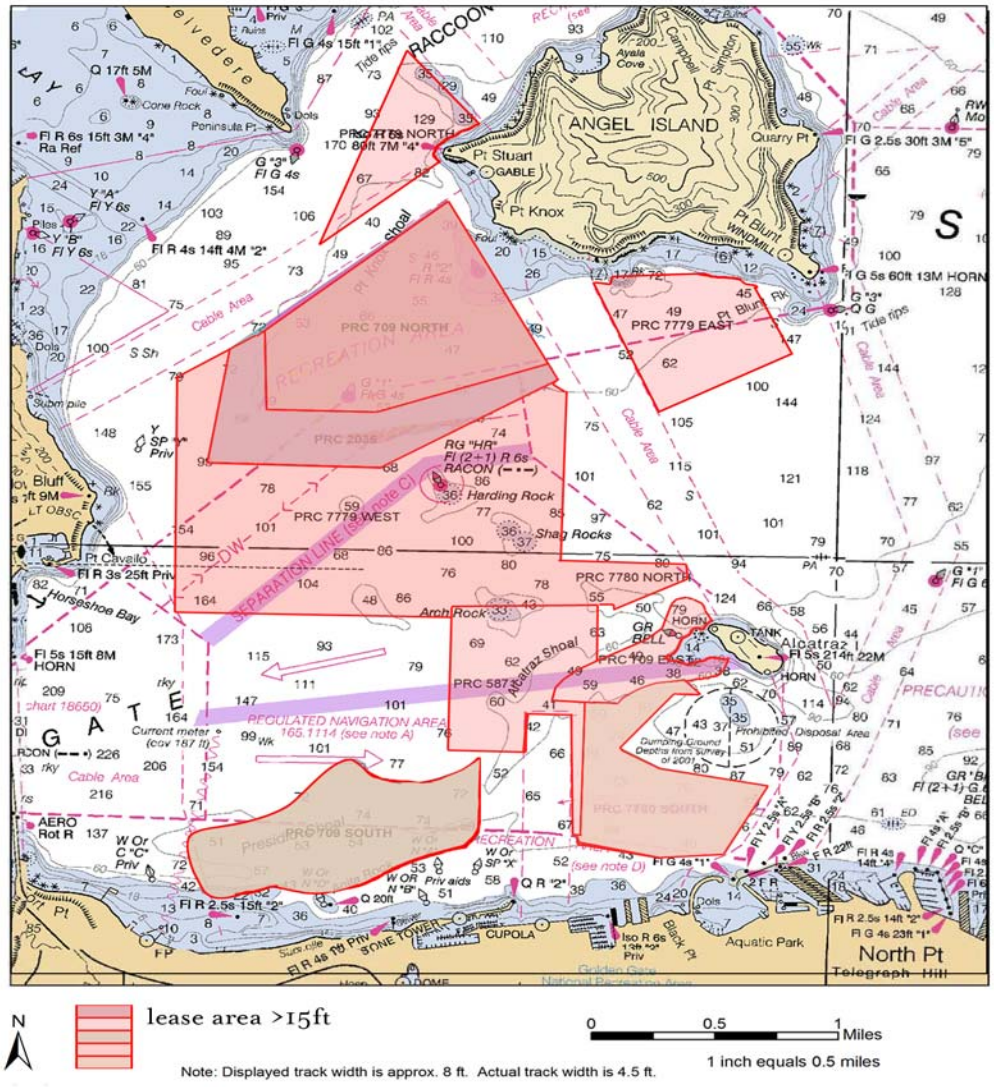


Figure 3 – Topography of San Francisco Bay including Topography and Physical Features of the Sand Mining Leases Including RMC's SLC 5871.1

LEAD AGENCY CERTIFICATION

I, the undersigned, hereby certify that this reclamation plan complies with the applicable requirements of Articles 1 and 9 (commencing with Sections 3500 et seq. and 3700 et seq., respectively) of Chapter 8 of Division 2 of Title 14 of the California Code of Regulations, and with the requirements of the Surface Mining and Reclamation Act, Sections 2710 et seq.

Signed this_____day of _____ , 2004___

_____
State Mining and Geology Board

STATEMENT OF RESPONSIBILITIES

I, the undersigned, hereby agree to accept full responsibility for reclamation of all mined lands as described and submitted herein and in conformance with the applicable requirements of Articles 1 and 9 (commencing with Sections 3500 et seq. and 3700 et seq., respectively) of Chapter 8 of Division 2 of Title 14 of the California Code of Regulations, the Surface Mining and Reclamation Act commencing with Section 2710 et seq., and with any modifications requested by the administering agency as conditions of approval.

Signed this 25 day of October, 2004

Mine Operator or Operator's Agent: Dennis Tsuchida DENNIS TSUCHIDA

Company: RMC Pacific Materials

APPROVED

LEAD AGENCY REPRESENTATIVE (S)	DATE
(1)	
(2)	